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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,590	03/09/2001	John H. Santhoff	021-04	6109

44279 7590 08/02/2004

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CARLSBAD, CA 92008

EXAMINER

BURD, KEVIN MICHAEL

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/802,590

Applicant(s)

SANTHOFF ET AL.

Examiner

Kevin M. Burd

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2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 and 12 is/are allowed.
- 6) ☒ Claim(s) 1,3-7,9 and 10 is/are rejected.
- 7) ☒ Claim(s) 2,8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

1. This office action, in response to the amendment filed 4/8/2004, is a final office action.

Response to Arguments

2. The previous objection to the claims is withdrawn in view of the amendment to claims 1 and 6.

3. Applicant has added claims 11 and 12. These claims are duplicates of claims 2 and 8 respectively. A new claim objection is stated below.

4. The previous rejection of claims 5 and 10 under 35 USC 102(b) as being anticipated by Burnsweig et al (US 4,206,316) is withdrawn in view of the amendment to the claims. A new rejection of claims 5 and 10 is stated below.

5. Applicant states, on page 14 of the amendment, the combination of Burnsweig and Hutch would result in an inoperable combination. Burnsweig teaches transmission of a continuous sine wave and Hutch teaches a signal correlator for correlating pulse pairs. Applicant further states, the signal correlator of Hutch would not function if the continuous sine wave of Burnsweig was provided as an input.

Burnsweig discloses in col. 4, lines 7-16, that the received signal shown in figure 21b, is decoded and forms the PPM signal shown in figure 12. This PPM signal is the signal that is input to the correlator of Hutch for the reasons stated in the previous office action. Hutch would therefore receive the pulse pair input necessary for proper operation. Hutch also discloses the indication of an error signal will inhibit further

operation of certain gates in the correlator circuit (column 5, lines 35-40) thereby preventing false or corrupt data from being processed.

Claim Objections

6. Claims 2 and 8 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 11 and 12. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burnsweig et al (US 4,206,316).

Regarding claims 5 and 10, Burnsweig discloses transmitting a pulse train of bipolar pulse pairs as shown in figure 12. Each bipolar pulse pair comprises a positive and a negative pulse (figure 12) and each of the pulse pairs are disposed in a frame (column 1, lines 34-36). The positive and negative pulses have the same amplitude and pulse width as shown in figure 12. The positive and negative pulses are positioned in a

"positive timing window" and a "negative timing window" respectively. Information is encoded in the pulses according to the position of the pulse (abstract).

Burnsweig does not disclose the transmission of the frames occurs in an ultra wideband system. However, it would have been obvious for one of ordinary skill in the art at the time of the invention to use the method of transmitting pulses disclosed above in any communication system. No matter the size or length of the pulse, the transmitting system will allow the original data to be recovered in the receiver (column 2, lines 30-39).

8. Claims 1, 3, 4, 6, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burnsweig et al (US 4,206,316) in view of Hutch (US 3,961,203).

Regarding claims 1 and 9, Burnsweig discloses transmitting a pulse train of bipolar pulse pairs as shown in figure 12. Each bipolar pulse pair comprises a positive and a negative pulse (figure 12) and each of the pulse pairs are disposed in a frame (column 1, lines 34-36). The positive and negative pulses have the same amplitude and pulse width as shown in figure 12. The positive and negative pulses are positioned in a "positive timing window" and a "negative timing window" respectively. Information is encoded in the pulses according to the position of the pulse (abstract). Burnsweig does not disclose before receiving the complete pulse train, correlating the received positive pulse with the received negative pulse to determine whether an error has occurred in the transmission.

Hutch discloses correlating the received positive pulse with the received negative pulse to determine whether an error has occurred in the transmission before an entire transmission has been received (abstract). It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the teachings of Hutch into the transmission system of Burnsweig. By correlating the pulse pair, errors in the transmission can be detected quickly and new data can be sent if necessary.

The combination does not disclose the transmission of the frames occurs in an ultra wideband system. However, it would have been obvious for one of ordinary skill in the art at the time of the invention to use the method of transmitting pulses disclosed above in any communication system. No matter the size or length of the pulse, the correlation system can determine if an error has occurred and request a retransmission if necessary.

Regarding claim 3, the combination transmits data.

Regarding claim 4, the positive and negative pulses are placed in time slots as shown in figure 12.

Regarding claim 6, Burnsweig discloses transmitting a pulse train as stated above in paragraph 7. Burnsweig does not disclose before receiving the complete pulse train, correlating the received positive pulse with the received negative pulse to determine whether an error has occurred in the transmission.

Hutch discloses correlating the received positive pulse with the received negative pulse to determine whether an error has occurred in the transmission before an entire transmission has been received (abstract). It would have been obvious for one of

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ordinary skill in the art at the time of the invention to incorporate the teachings of Hutch into the transmission system of Burnsweig. By correlating the pulse pair, errors in the transmission can be detected quickly and new data can be sent if necessary.

Regarding claim 7, Hutch discloses calculating correlation errors in the transmission. If an error occurs, a retransmission is requested.

Allowable Subject Matter

9. Claims 11 and 12 are allowed.

The following is an examiner's statement of reasons for allowance: The combination of Burnsweig and Hutch does not disclose calculating error rates in the transmission and comparing the calculated error rate to a Typical Minimum Acceptable Bit Error Rate and a Maximum Bit Error Rate for Correction as stated in claims 2 and 8.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

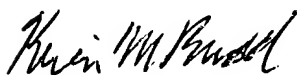
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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is 703-308-7034. The examiner can normally be reached on Monday - Thursday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 703-306-3034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin M. Burd
8/1/2004